



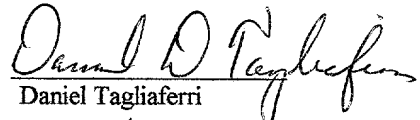
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: John B. Groe  
Serial No.: 10/051,762  
Filed: 1/16/2002  
For: Variable-Gain Low Noise  
Amplifier to Reduce Linearity  
Requirements on a Radio  
Receiver  
Group Art Unit: 2681  
Examiner: Unknown  
Atty. Docket: 000110

**CERTIFICATE OF  
MAILING/TRANSMISSION  
(37 C.F.R. § 1.8(a))**

I hereby certify that this correspondence is, on the date shown below is being deposited with the United States Postal Service  
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April 9, 2002

  
Daniel Tagliaferri

EM: EV 097167068 US

**PRELIMINARY AMENDMENT**

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to the Examination of this Application, Please amend the Application as follows:

**IN THE SPECIFICATION**

Please replace the paragraph beginning at page 5, line 10, with the following rewritten paragraph:

--Figures 7-9 show several variable-gain LNA topologies constructed in accordance with the present invention.--

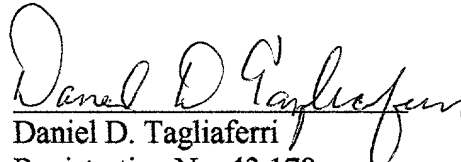
**REMARKS**

This Preliminary Amendment is being filed to correct a typographical error in the Specification to clarify that there are only nine (9) drawings described by the Specification.

Applicant respectfully submits that no new matter is entered herein by this preliminary

amendment. Entry of the amendments set forth in this Preliminary Amendment is respectfully requested. Attached hereto is a marked-up version of the changes made to the Specification by this amendment. The attached page is captioned "**Version with markings to show changes made.**"

Respectfully submitted,

  
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**Version with markings to show changes made**

**In the Specification:**

The paragraph beginning at page 5, line 10, has been amended as follows:

Figures 7-9[10] show several variable-gain LNA topologies constructed in accordance with the present invention.

FIG. 7 is a schematic diagram of a variable-gain LNA topology. The circuit includes an input matching network (IMN) connected to an LNA core, which is further connected to an output matching network (OMN). The LNA core consists of a variable-gain amplifier (VGA) and a feedback network. The VGA is implemented using a differential pair of transistors (M1, M2) with a variable bias current source (Ibias). The feedback network includes a feedback capacitor (Cfb) and a feedback resistor (Rfb). The output matching network (OMN) is connected to the output of the LNA core. The circuit is powered by a supply voltage (VDD) and a ground connection (GND).